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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,908	12/26/2001	Ik Soo Kim	8733.521.00	7531
30827	7590	09/21/2007		
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER BOOSALIS, FANI POLYZOS	
			ART UNIT 2884	PAPER NUMBER
			MAIL DATE 09/21/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/025,908

Applicant(s)

KIM, IK SOO

Examiner

Faye Boosalis

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Weisfield et al (US 5,648,674 A)* and *Kim et al (US 6,043,511 A)*.

Regarding claims 1, 9-10, Weisfield discloses a method and arrangement of an X-ray detecting device detecting cells (x-ray sensor array, for each unit of cell circuitry) (See Abstract) arranged at intersections between data lines (122) (124) and gate lines (112)(See Figs. 1 and 3, Abstract and col. 8, lines 7-31), the device comprising: a ground line (i.e. ground pads) (106) extend in column direction (See Fig. 3), connected to a plurality of detecting cells so as to apply a ground voltage (col. 8, lines 20-24); a storage electrode connected to the ground line (106), the storage electrode electrically connected to the plurality of detecting cells) (col. 1, line 18-21 and col. 8, lines 20-24). Although Weisfield does not specifically disclose pixel electrodes, Weisfield discloses electrodes are in each detecting cell of the plurality of X-ray detecting cells (col. 1, lines 55 - col. 2, lines 5) and the electrodes are formed on an insulating layer (See Abstract). Electrode arrays are well known to be pixel electrodes. Kim discloses a method of fabricating an X-ray detecting device having x-ray detecting cells arranged at

intersections between data lines (51) and gate lines (11), the method comprising the steps of: forming a gate-insulating layer on a substrate (100) (See Abstract and Figs. 5 and 6); forming a storage electrode (70) (i.e. pixel electrode overlaps the gate line via the gate insulating layer and this portion functions as a storage capacitor) (col. 4, lines 34-35) connected to adjacent X-ray detecting cells along column direction (See Fig. 5); forming a ground line (106) connected to the storage electrode so as to apply a ground voltage to the adjacent x-ray detecting cells (col. 8, lines 20-24); gate insulating film (20) insulates the gate electrode (20), the source electrode (52) and the drain electrode (53) (col. 5, lines 59-65) (i.e. the gate insulating layer (20) under the connection portion (57) are not etched) (See Fig 17C and col. 47-60); a storage-insulating layer covers (40) covers the source electrode (52) and the drain electrode (53) (See Fig. 13B) (col. 6, lines 65-col. 7, lines 5); a protective film (6) (i.e. made of opaque material and serves as a light shielding function) on the storage insulating layer and a drain contact hole for allowing pixel electrode and drain electrode to be in electrical contact with each other (See Fig. 14 and col. 7, lines 35-40). Therefore, both Weisfield et al and Kim et al disclose an x-ray detecting device fabrication arrangement, as disclosed supra, so as to enable reducing ground line breakage.

Regarding claims 2 and 11, Kim discloses a thin film transistor (TFT) having a gate electrode (12) connected to a gate line (11); a source electrode (52) connected to a data line (51); and a drain electrode (53) connected to a pixel electrode (See Abstract).

Regarding claim 3, Kim discloses the gate insulating film (20) insulates the gate electrode (20), the source electrode (52) and the drain electrode (53) (col. 5, lines 59-65); a storage-insulating layer covers (40) covers the source electrode (52) and the drain electrode (53) (See Fig. 13B) (col. 6, lines 65-col. 7, lines 5); a protective film (6) (i.e. made of opaque material and serves as a light shielding function) on the storage insulating layer and a drain contact hole for allowing pixel electrode and drain electrode to be in electrical contact with each other (See Fig. 14 and col. 7, lines 35-40).

Regarding claim 4, Kim discloses a storage contact hole (14)(15) allows the pixel electrode and the transparent storage electrode to be connected through the protective film (See Fig. 13C and col. 7, lines 6-17)

Regarding claim 5, Kim discloses the transparent storage electrode (pixel electrode) is formed from a transparent conductive material, i.e. indium tin oxide (ITO) layer (col. 1, lines 66-col. 2, line 2). Weisfield also discloses a transparent storage electrode (i.e. third patterned conductive layer) is formed from a transparent conductive material (i.e. indium tin oxide) (col. 14, lines 66-67 – col. 15, line 3).

Regarding claims 6 and 13, Weisfield discloses a refractory metal such as, molybdenum may be used for the conductive layer (i.e. applying voltage) (col. 2, lines 20-28).

Regarding claims 7-8 and 14-15, although Kim nor Weisfield disclose of an auxiliary data line the material the auxiliary data line is formed from, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an additional data line, since it has been held that the mere duplication of the essential

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working parts of a device involves only routine skill in the art. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) and it would have also been obvious forming the additional data line from a conductive material, such as; ITO, IZO or ITZO, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 12, Kim discloses the transparent storage electrode (pixel electrode) is formed from a transparent conductive material, i.e. indium tin oxide (ITO) layer (col. 1, lines 66-col. 2, line 2). Weisfield also discloses a transparent storage electrode (i.e. third patterned conductive layer) is formed from a transparent conductive material (i.e. indium tin oxide) (col. 14, lines 66-67 – col. 15, line 3).

**Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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